Interactive Broadcasting and Community Informatics

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Abstract. This paper explores the potential of interactive broadcasting – a combination of more traditional communications technologies such as radio and telephony with internet based web conferencing as a mechanism for community development and the engagement of citizens in the use of the latest new media technologies to support sustainable development

Keywords. Informatics, Community, Interactive broadcasting, Radio.

1. Introduction

Community Informatics is the study of how Information Communications Technologies (ICT) can be used to shape the social and economic development of physical communities. One of the great challenges of the Information Society is the so-called "Digital Divide" which mirrors the social and economic inequities between the rich and poor and the developed and developing nations. Substantial investment and political commitment is being put into bridging the digital divide but one of the biggest obstacles in disadvantaged communities, which may also have high rates of illiteracy, is the relevance and usability of the technologies to the poorest sections of society.

There is evidence through projects like the "Hole in the Wall" computer in India (see http://www.greenstar.org/butterflies/Hole-in-the-Wall.htm) that those who have had no previous experience or knowledge of ICT can, by trial and error and experimentation, develop usages and a common language for the technology relevant to their own experience. There is also evidence through projects like "Daknet" (see http://www.medialabasia.org/mlaShow.php?typeId=4&subTypeId=15), which uses wireless technology and a mobile technology unit to deliver email to remote villages, that communities can develop ways of using ICT which reflect but improve on previous practices in an evolutionary approach to bridging the digital divide.

2. The Multi-Purpose Telecentre

One of the development models gaining increasing popularity and attracting substantive investment is the multi-purpose telecentre as a hub for community learning and social and economic development through ICT. Such models can be mobile or transportable, or can be in a fixed location, but both equipped with computers and some form of communications access to the outside world. This paper argues for the inclusion and integration or radio and telephony technologies as a way of making the transition to and accessibility of the Information Age easier for those who are currently disadvantaged.

3. The Role of Radio in Learning

One of the challenges of bridging the "Digital Divide" is how to engage people and organizations in the productive use of Information Communications Technology. This challenge applies equally to both the developed and emerging nations. Unless people can see the relevance of technology to their own lives, they will not be prepared to make the investment in learning how to use the equipment.

Radio has a very important role to play in raising awareness of the applications which peers of the listeners have found to be beneficial. Because radio is affordable, accessible, and easy to use, it is an obvious but often overlooked medium for developing an interest in technology and facilitating lifelong learning.

4. Interactive Broadcasting

Interactive broadcasting is a participatory form of learning which can be accessed at the most basic level through a "clockwork radio", but which has the potential to bring local and global knowledge into contact with each other to smooth the transition into the Information Society, especially in developing countries. Interactive broadcasting is already practised in developed countries through television as well as radio and has proved to be a successful way to engage and involve audiences in programs as well as generating income for the program makers.

Interactive Broadcasting therefore is an emerging phenomenon which could provide new opportunities for the creative use of traditional and new information communications technologies both for entertainment and education, and could create also new business models for commercial sustainability. Early examples of interactive broadcasting included telephone chat shows which now extend to text messaging and email as tools to stimulate audience engagement and provide low cost content.

This paper describes the technologies and methodologies used in interactive broadcasting and describes some examples of how radio and internet technologies can be combined to lead communities into the Information Age.

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5. Kothmale Radio (Radio Browsing)

One of the techniques used to combine radio with the internet to create a community learning experience is the use of community radio educational programs in which listeners are invited to telephone or post their questions during the program. The presenters use the facilities of their telecentre to access the internet to research the questions and deliver the answers and contact points during a subsequent broadcast. It is an asynchronous form of e-learning facilitated by access to the internet and radio as a communications medium.

A good example of how radio broadcasting is used in combination with the internet is the "radio browsing" used by Kothmale Radio in Sri Lanka – a community radio station which uses the internet to engage its audience in both determining and creating program content – (see http://www.kothmale.net/)

6. The Radio with Pictures Show

A more sophisticated synchronous approach to interactive broadcasting is "THE Radio with Pictures Show" concept, combining live radio broadcasting with live web conferencing in a hybrid experience which people can participate in at a number of levels from basic radio listening to full interactive web conferencing in a virtual classroom environment.

The author of this paper (contact at dwortley@btconnect.com) pioneered "THE Radio with Pictures Show" format in a series of interactive broadcasts in May/June 2002 (see http://www.hcln.net/hfm/radioflyer.htm). Each early morning program took the form of a breakfast radio chat show with guest presenters in the studio, elsewhere in the UK and all around the globe.

All the programs were on the theme of the Information Society and all the guests were subject matter experts in their field. The mixture of local, national and international guests was deliberate and significant. It was intended to bring the local and global community together in a shared appreciation of the commonality of Information Society issues.

The web conferencing technology used for the broadcasts was HP Virtual Classroom, a hosted service provided by Hewlett Packard in the USA (see https://www.hpe-learning.com/default.aspx) HP also very kindly supplied an audio teleconferencing bridge so the both presenters and audience could interact over the standard telephone network like a normal radio chat show.

"THE Radio with Pictures Show" was a great success and archives of the program are still being accessed by internet users all across the world (see http://www.hcln.net/hfm/archives/index.htm).).

7. The Future

Both e-learning and interactive collaborative applications are experiencing massive development and growth, facilitated by the continuous improvements in and availability of bandwidth through broadband connectivity, and the seemingly endless march in price/performance of multimedia desktop computing.

We are also seeing integration of digital home entertainment technology with the desktop computer to create a powerful "edutainment" solution.

These developments and the pressures that digital broadcasters increasingly face in sustaining audience levels, have led to an increase in interactivity in both radio and television. Reality TV shows and radio chat shows try to engage the audience more and more, not only to boost audience ratings, but also to keep productions costs as low as possible.

The use of web conferencing and "THE Radio with Pictures Show" concept is not yet fully developed, partly because of low audience and broadcaster awareness and partly because of current limitations in the number of concurrent users in web conferencing applications.

This situation is rapidly changing as the performance bottlenecks in web conferencing are resolved and hardware/software begins to embed the collaborative processing needed to maintain acceptable performance in large web conferences.

The web conferencing market is also developing rapidly in its own right with Microsoft's acquisition of Placeware to establish its own branded conference hosting service, the emergence of new players such as Sanako of Finland (see http://www.sanako.com/), and the launch of Macromedia Breeze (see http://www.macromedia.com/software/breeze/?promoid=home_prod_breeze_101503) which is compatible with a wide range of existing web browsers through its use of the "Macromedia Flash" plug-in.

All of these factors are likely to generate more interest in and use of interactive broadcasting techniques in both education and entertainment.